

acquisition and handling system must record the hourly NO<sub>x</sub> emissions as well as the International Organization for Standardization (ISO) standard conditions (if applicable).

In lieu of recording the ISO standard conditions, a worst case ISO correction factor can be calculated using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (H<sub>a</sub>), minimum ambient temperature (T<sub>a</sub>), and minimum combustor inlet absolute pressure (P<sub>o</sub>) into the ISO correction equation. By using worst case parameters in this equation, the owner/operator can ensure compliance in all situations without having to continuously monitor temperature, humidity and pressure. Several case-by-case determinations performed by EPA have accepted this methodology as an alternative to continuous monitoring of atmospheric conditions.

No data generated using the data substitution methodology in 40 CFR part 75 may be used. Instead, these periods of missing data are identified and summarized in the excess emissions and monitoring report required in 40 CFR 60.13. For turbines using NO<sub>x</sub> CEMS, we have defined excess emissions as any unit operating hour during which the 4-hour rolling average NO<sub>x</sub> concentration exceeds the applicable emission limit.

The averaging time selected for combustion turbine NO<sub>x</sub> CEMS to define the periods of excess emissions is a period of 4 hours averaged each hour. The 4-hour period is representative of the overall elapsed time in a typical EPA Method 20 of 40 CFR part 60, appendix A, source test. This period has been found adequate to represent the performance of combustion turbine NO<sub>x</sub> emissions and NO<sub>x</sub> emission control systems. The 4-hour period is a relatively short averaging time compared to 24-hour and monthly averaging times used for other types of combustion devices to account for the NO<sub>x</sub> emissions variability, particularly in solid fuels. Combustion turbines typically use natural gas or No. 2 distillate oil, which have a relatively uniform fuel nitrogen content, therefore, a relatively short averaging time such as 4 hours is appropriate. An averaging time of 1 hour was also considered but was rejected since 4 hours more closely represent the typical duration of a combustion turbine stack test and includes the ability to account for a small amount of nitrogen variability.

A 1-hour period was selected as the recurring (rolling) period for which the 4-hour averages are calculated since it is already required to be reported under 40

CFR part 75 and is convenient and appropriate to use.

We are allowing the use of NO<sub>x</sub> CEMS as an alternative to continuously monitoring fuel consumption and water or steam to fuel ratio because the majority of new turbines do not rely on water injection for NO<sub>x</sub> control. Therefore, for those turbines, the monitoring originally required by subpart GG is not appropriate. The use of a NO<sub>x</sub> CEMS will show compliance with the NO<sub>x</sub> standard of subpart GG over all operating ranges. Additionally, many of the units affected by subpart GG are already required to install and certify CEMS for NO<sub>x</sub> under other requirements, such as the acid rain monitoring regulation in 40 CFR part 75, or through conditions in various permit requirements. To reduce the burden on these units, we are allowing the use of CEMS units that are certified according to the requirements of 40 CFR part 75. The 40 CFR part 75 testing procedures to certify the CEMS are nearly identical to those in 40 CFR part 60, and 40 CFR part 75 has rigorous quality assurance and quality control standards. We, therefore, believe it is appropriate to allow the use of 40 CFR part 75 CEMS data for subpart GG compliance demonstration. A definition of unit operating hour, which includes the concepts of "full" and "partial" operating hours, is needed to clarify how to validate an hour when using CEMS and for the purpose of defining excess emissions, deviations, and periods of monitor downtime.

#### *B. Optional Fuel-Bound Nitrogen Allowance*

The NO<sub>x</sub> emission standard in 40 CFR 60.332 includes a NO<sub>x</sub> emission allowance for fuel-bound nitrogen. The use of this allowance for fuel-bound nitrogen will be optional upon promulgation of the direct final rule. Owners or operators will be able to choose to accept a value of zero for the NO<sub>x</sub> emission allowance. The NO<sub>x</sub> emission limitations in many State permits are much more stringent than those of subpart GG. Many turbines are required by their permits to be fired only with pipeline quality natural gas, which is almost free of fuel-bound nitrogen. Therefore, these facilities are not likely to use the fuel-bound nitrogen credit.

#### *C. Frequency of Fuel Nitrogen and Sulfur Content Sampling*

Several revisions to the sampling frequency requirements for fuel nitrogen content and fuel sulfur content are being made.

#### **1. Nitrogen Content for Turbines That Do Not Claim the Allowance for Fuel Bound Nitrogen**

We are amending subpart GG so that sources are required to monitor the nitrogen content of the fuel being fired in the turbine only if they claim the allowance for fuel bound nitrogen. For sources that do not seek to use the fuel-bound nitrogen credit, the sampling requirements to determine the daily fuel nitrogen concentrations are not required.

#### **2. Nitrogen and Sulfur Content for Turbines Firing Fuel Oil**

The sampling frequency for determining the nitrogen and sulfur content of fuel oil has been revised. Previously for bulk storage fuels, sampling and analysis was required each time new fuel was added. The requirement to sample the nitrogen and sulfur content of the fuel each time fuel is transferred to the storage tank from any other source can be burdensome for a facility if there are one or more large bulk storage tanks which are filled by tanker trucks or isolated from the turbines during the filling process. If the fuel is not fed to the turbines during the filling process, no environmental benefit is gained by sampling every time oil is added from a tanker truck. Similarly, no environmental benefit is gained by sampling a tank which remains isolated from feeding turbines until it is filled. It is less burdensome to allow a tank to be filled completely, regardless of how many tanker trucks it takes, and then drawing a sample of the combined fuel. In the end, this mixture of fuel is what will be fed to the turbines. Thus, we are eliminating the requirement to sample each time new fuel is added and are allowing the use of any of the four sampling options from 40 CFR part 75, appendix D. The four options are as follows: daily sampling, flow proportional sampling, sampling from a unit's storage tank, or sampling each delivery.

#### **3. Sulfur Content for Turbines Firing Natural Gas**

A definition for natural gas has been added to the definitions section. It is consistent with the latest definition in 40 CFR part 72. Owners and operators of turbines that are combusting natural gas are now provided with alternatives to demonstrate that the fuel meets the sulfur content requirement. We believe that sulfur sampling is unnecessary for fuels that qualify as natural gas. As defined in the direct final rule, natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet,